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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/872,571 | 06/01/2001 | Gary Ger | 4024-4065 | 2680 |
| 27123 | 7590 | 02/08/2005 | EXAMINER | |
| MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101 | | | | TRAN, DZUNG D |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2633 | |

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------|------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/872,571 | GER ET AL. | |
| | Examiner Dzung D Tran | Art Unit 2633 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08 September 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takai et al. US patent no. 5,715,339 in view of Trezza US patent no. 6,788,895.

Regarding claims 1, 11, 13 and 15, Takai discloses a multiple channel transmission system, comprising:

a first plug in module (figure 15) having an edge surface and having disposed on a major surface thereof, spaced away from said edge surface,

a transmitter section (101A of figure 11, 510, 511 of figure 12, 15 of figure 15) including an array of transmitter modules (5A1 to 5A5) each operative to convert a respective electrical signal into a corresponding optical signal (col. 12, lines 60-65, col. 13, lines 25-27);

a first plurality of bundles of optical waveguides (20A1 to 20A5) dimensioned and arranged to transmit the optical signals, a first end of a first of (20A1) said first plurality of bundles (20A1) being optically coupled to a first group of said transmitter modules (5A1) and a first end of a second (20A2) of said first plurality of bundles being

optically coupled to a second group of said transmitter modules (5A2), said first plurality of bundles being stacked in planes substantially parallel to said major surface to form a two dimensional array at a location proximate each first end (col. 12, line 66 to col. 13, line 4, col. 13, lines 28-36); and

a first plurality of multi-channel optical connectors (shown connected to 440A) disposed at spaced locations along said edge, a first optical connector being optically coupled to a second end of the first of said bundles and a second optical connector being optically coupled to a second end of the second of said bundles (see figure 11 and detail);

a second plug in module (figure 16) having a second edge surface and having disposed on a major surface thereof, spaced away from said second edge surface, a receiver section (101B of figure 11, 520, 521 of figure 12, 35 of figure 16) including an array of receiver modules (5B1 to 5B5) each operative to convert a respective optical signal into a corresponding electrical signal (col. 13, lines 5-12, 37-45);

a second plurality of bundles of optical waveguides (20B1 to 20B5) dimensioned and arranged to receive optical signals to be converted, a first end of a first (20B1) of said second plurality of bundles being optically coupled to a first group of said receiver modules (5B1) and a first end of a second (20B2) of said second plurality of bundles being optically coupled to a second group of said receiver modules (5B2), said second plurality of bundles being stacked in planes substantially parallel to the major surface of

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the second plug in module to form a two dimensional array at a location proximate each second plug-in module first end (col. 13, lines 37-39, 55-57);

and

a second plurality of multi-channel optical connectors (shown connected to 440B) disposed at spaced locations along said second edge, a first optical connector of the second plurality of optical connectors being optically coupled to a bundle of said second plurality of bundles and a second optical connector being optically coupled to another bundle of said second plurality of bundles (see figure 11 and detail). Takai differs from claims 1, 11, 13 and 15 in that Takai does not disclose a transmitter section including an array of transmitter modules each having a two dimensional array of lasers sharing a common substrate and a receiver section including an array of receiver modules each having a two dimensional array of photodetectors sharing a common substrate. Trezza discloses a two arrays of transceivers 10 and 20 of figure 3B having a transmitter section including an array of transmitter modules each having a two dimensional array of lasers 12 (col. 7, line 31) sharing a common substrate (silicon substrate) and a receiver section including an array of receiver modules each having a two dimensional array of photodetectors 14 (col. 7, line 33) sharing a common substrate (silicon substrate). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to include the teaching of Trezza in the communication system of Takai. One of ordinary skill in the art would have been motivated to replace the two dimensional array of lasers and photodetectors of Trezza with the one dimensional array of lasers and photodetectors of Takai so that the

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apparatus of Takai able to handle a larger communication system. Furthermore, it eliminates the wiring connection among the plurality one-dimensional array of lasers and photodetectors.

Regarding claims 2, 6, 12 and 14, Takai further discloses in figures 4, 12 and 14 the transmitter modules (15, 510, 511, 5C1 to 5C16) are arranged in an NxM two dimensional array, and wherein said first plurality of fiber bundles comprises N fibers arranged in M bundles.

Regarding claims 3 and 8, Takai further discloses in figures 7, 12 and 14 the receiver modules (35, 520, 521, 5D1 to 5D16) are arranged in an NxM two dimensional array, and wherein said second plurality of fiber bundles comprises N fibers arranged in M bundles.

Regarding claim 4, in figure 13, Takai further discloses first plug in module further includes a first plug-in module receiver section (102B) including an array of receiver modules (5D1 to 5D16) each operative to convert a respective optical signal into a corresponding electrical signal (col. 13, lines 5-12, 37-45);

a third plurality of bundles of optical waveguides (24-1 to 24-16) dimensioned and arranged to receive optical signals to be converted from a remote plug-in module, a first end of a first of said third plurality of bundles being optically coupled to a first group of said first plug-in module receiver modules (5D1) and a first end of a second of

said third plurality of bundles being optically coupled to a second group of said first plug-in module receiver modules (5D2), said third plurality of bundles being stacked in planes substantially parallel to the major surface of the first plug in module to form a two dimensional array; and a third plurality of multi-channel optical connectors disposed at spaced locations along the edge of the first plug in module, a first optical connector of the third plurality of optical connectors being optically coupled to a bundle of said third plurality of bundles and a second optical connector of the third plurality being optically coupled to another bundle of said third plurality of bundles (see figure 13 and detail).

Regarding claims 5, 7 and 9, Takai further discloses in figures 3, 4, 6, 7, 11, 12 and 14, the plurality of transmitter modules and receiver modules are fixed in one body.

Regarding claim 10, Takai further discloses optical fiber links (22) for interconnecting at least some of said first plurality of optical connectors to at least some of said second plurality of connectors.

3. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DT
1/28/2005

M. R. Sedighian
M. R. SEDIGHIAN
PRIMARY EXAMINER